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**International Preliminary  
Examination Authority  
EUROPEAN PATENT OFFICE**  
P.B. 5818 Patentlaan 2  
NL-2280 HV Rijswijk  
Netherlands

Clamart, February 7, 2005

International Patent Application No. **PCT/EP 03/13305**  
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Our Ref: **WO 21.1053**

Dear Sirs,

I refer to the written opinion of the International Preliminary Examination Authority dated November 11, 2004.

The Applicant respectfully submits the new set of claims, which is believed to overcome the Examiner's objections with regard to novelty and clarity to the set of claims. The new set of claims contains an independent claim 1 corresponding to claims 1, 2, 6, 7 and 8 as filed and which is based also on the description from page 6, §3 to page 8, §2. The dependent claims 2 to 8 correspond respectively to claims 9 to 14 and 16 as filed, renumbered and harmonized in consequence. The claims 3 to 5 and 15 as filed have been cancelled without prejudice.

In view of all the cited documents and the remarks of the Examiner, the claim 1 is considered to be new.

D1: US5873410 is considered to be the closest prior art. In D1, "the annular space 40 is put in communication with the low-pressure gas source 36 by means of the set of control valves 34. The low pressure prevailing in the annular space 40 makes it possible for the mixture of hydrocarbons and of water, forming the effluent coming from the reservoir seam 14, to rise inside the well through the valve 24 and the conduit 22, filling the annular space 40 as far as

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an upper intermediate level 67 and thus forcing back the low- pressure gas from the reservoir towards its source", (column 3, line 63 – column 4, line 5). Our invention is based on a different mechanism of hydrostatic pressure: oil and water flow into the well via the sidetrack until the hydrostatic pressure of the oil and water in the well balances the formation pressure of the oil-producing formation such that further flow into the well ceases. The person skilled in the art will have first to change the design of the apparatus of D1: redefining zones and repositioning valves; and furthermore will have to change the mechanism and the working of the separation. All these realizations ask an excessive obviousness, which can only be considered as inventiveness. It is also remarked that D2: US6213208 just points up an arrangement with multilateral wells, no more specific embodiments are done in those wells to separate one from the other with such valves as in our invention or such architecture as in our invention. Therefore the knowledge of D2 does not bring to the person skilled in the art anything useful. The claim 1 is considered to be inventive.

The objections on item V from 1 to 6 are considered to be overcome in view of the discussion above.

The objections on item V-7 also than the harmonization between the description and the set of claims will be amended when the final set of claims will be accepted.

It is therefore submitted that the claims are both novel and involve an inventive step and a favourable preliminary examination report is requested.

Yours faithfully,



Hélène Raybaud  
European Patent Attorney

Enc.

- 1 A method of producing oil from a well comprising:
  - a vertical section extending from the surface to a depth below the oil-producing formation;
  - a sidetrack extending from the vertical section into the oil-producing formation; and
  - a first valve, located in the well, and operable to prevent flow of fluid from the vertical section into the sidetrack;
  - a second valve, located in the well, and operable to prevent flow fluid from the portion of the vertical section below the oil-production formation into the sidetrack or the portion of the vertical section of the well above the sidetrack;said method being characterized by the step of :
  - allowing oil and water to flow into the well via the sidetrack until the hydrostatic pressure of the oil and water in the well balances the formation pressure of the oil-producing formation such that further flow into the well ceases;
  - allowing the oil and water in the vertical section of the well to separate under gravity so as to produce (i) a lower layer of water, at least part of which is located in the part of the vertical section below the oil-producing formation, and (ii) an upper layer of oil having its upper surface below the well surface and its lower surface above the sidetrack;
  - forcing the separated oil and water back down the well and operating the first valve such that substantially no fluid is forced into the sidetrack, and water is forced into the underground formation below the oil-producing formation; and
  - allowing oil and water flow to recommence from the sidetrack.
- 2 The method as claimed in claim 1, wherein separated oil and water are forced down the well until the oil water interface is close to the lower end of the vertical section.

- 3 The method as claimed in claim 1 or 2, wherein the steps of flowing, separating, forcing back are repeated until oil flows from the well at the surface.
- 4 The method as claimed in claim 1, 2 or 3, wherein the step of forcing separated oil and water down the well is performed by applying pressure to the vertical section from the surface.
- 5 The method as claimed in claim 4, wherein pressure is applied by pumping oil or gas into the vertical section.
- 6 The method as claimed in any of claims 1 to 5, wherein the separated oil and water are forced back down the well such that the water is re-injected into the underground formation below the producing formation.
- 7 The method as claimed in claim 6, wherein the re-injection is performed below the fracture pressure of the underground formation.
- 8 The method as claimed in any of claims 1 to 7, wherein the oil is pumped from the well.